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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,242	09/26/2001	Sreen A. Raghavan	M-11923-1P US	3308
7590	12/17/2004		EXAMINER	
FINNEGAN, HENDERSON, FARABOW GARRETT & DUNNER, L.L.P. 1300 I STREET, N.W. WASHINGTON, DC 20005-3315			WILLIAMS, LAWRENCE B	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/965,242	RAGHAVAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lawrence B Williams	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9 and 15 is/are rejected.
- 7) ☒ Claim(s) 10-14 and 16-27 is/are objected to.
- 8) ☒ Claim(s) 1-6 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. <u>1</u>   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-6, drawn to a transmission system comprising a plurality of transmitters, classified in class 375, subclass 295.
  - II. Claims 7-37, drawn to a transmission system comprising a plurality of receivers, classified in class 375, subclass 316.
2. During a telephone conversation with Gary Edwards on 09 December 2004 a provisional election was made without traverse to prosecute the invention of a transmission system comprising a plurality of receivers, claims 7-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Drawings***

3. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
4. Figures 1A - C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37

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CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

5. The disclosure is objected to because of the following informalities: Examiner suggests applicant define the acronym SERDES in paragraph [005] of page 2 of the specification.

Appropriate correction is required.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Rowan et al. (WO 99/45683).

(1) With regard to claim 7, Rowan et al. discloses in Fig(s). 9B – 11, a transmission

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system, comprising: a plurality of receivers, each of the plurality of receivers receiving signals from one of a plurality of transmission bands, at least one of the plurality of receivers comprising: a down converter (912, 916) that converts an input signal from the one of the plurality of transmission bands to a base band; a filter (914) coupled to receive signals from the down converter, the filter substantially filtering out signals not in the base band; an analog-to-digital converter (918) coupled to receive signals from the filter and generate digitized signals; an equalizer (1002) coupled to receive the digitized signals; and a trellis decoder (1100) coupled to receive signals from the equalizer and generate recreated data, the recreated data being substantially the same data transmitted by a corresponding transmitter (pg. 14, line 22- pg. 15, line 27).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8, 9, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Rowan et al. (WO 99/45683) as applied to claim 7 above, and further in view of Baker et al. US Patent 6,163,563).

(1) With regard to claim 8, as Noted above, Rowan et al. discloses all limitations of claim 7. Rowan does not however teach wherein the down-converter creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function at the

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frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function at the frequency of the one of the plurality of transmission bands.

However, Baker et al. teaches in Fig. 1, wherein the down-converter (24) creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function (34) at the frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function (36) at the frequency of the one of the plurality of transmission bands (col. 4, line 58-col. 5, line 11).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Baker et al. to modify the invention of Rowan et al. for its known usefulness in communication systems employing integrated circuits (col. 16, lines 20-52).

(2) With regard to claim 9, Baker et al. also discloses in Fig. 1, wherein the filter includes an in-phase filter (42) filtering the in-phase signal and a quadrature filter (44) filtering the quadrature.

(3) With regard to claim 15, claim 15 inherits all limitations of claim 8 above. Furthermore Baker et al. discloses in Fig. 1, wherein the analog-to-digital converter includes a first analog-to-digital converter (46) coupled to receive signals from the in-phase filter and a second analog-to-digital converter (48) coupled to receive signals from the quadrature filter.

***Allowable Subject Matter***

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11. Claims 10-14, 16-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a communication system that allows high data-rate transmission of data between components. A search of prior art records has failed to teach a communication system “ including an offset block coupled between the down-converter and the filter, the offset block offsetting the in-phase signal and the quadrature signal such that signals output from the analog-to-digital converter averages zero” or “including an amplifier coupled between the filter and the analog-to-digital converter, the amplifier amplifying an in-phase filtered signal from the in-phase filter and a quadrature filter signal from the quadrature filter such that the analog-to-digital converter is filled”. As disclosed in claims 10 and 11, respectively.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Ziegler et al. discloses in US 2003/0112798 A1 a Data Communication Method.

b.) Hendrickson et al. discloses in US 2002/0093994 A1 a Reverse Data De-Skew Method and System.

c.) Scott discloses in US Patent 4,710,992 Apparatus and Associated Method For Converting Serial Data Pattern Signals Transmitted or Suitable For Transmission Over a High Speed Synchronous Media To Parallel Pattern Output Signals.

d.) Scott discloses in US Patent 5,079,770 Apparatus and Associated Method For Converting Serial Data Pattern Signals Transmitted or Suitable For Transmission Over a High Speed Synchronous Media To Parallel Pattern Output Signals.

e.) Shimizu discloses in US Patent 5,293,378 Parallel Multi-Line Packet Transmission System.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Lawrence B. Williams

lbw

December 11, 2004



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